

NASA TECH BRIEF

Lyndon B. Johnson Space Center



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Application of Biological Filters in Water Treatment Systems

The problem:

Commercially available bacteria filters placed in a water line effectively block live micro-organisms and retain them against a microporous barrier. With time, however, bacteria accumulate on the barrier, find some nutrients, and begin to proliferate exponentially. The increasing population raises the probability that a breakthrough will occur and a colony will move downstream of the barrier. At the present, the effective lifetime of new filters is about 10 days.

The solution:

The life of these filters can be extended by using a bactericide to kill bacteria close to the barrier.

How it's done:

Silver chloride placed on or close to the barrier kills bacteria as they arrive. As a result, dead bacteria accumulate linearly, whereas previously, live bacteria accumulated exponentially. During continuous 30-day tests, no bacteriological contamination was found downstream of the filters with silver chloride added.

Note:

Additional information may be obtained from:
National Technical Information Service
Springfield, Virginia 22151
Single document price \$15.00
(or microfiche \$1.45)

Reference: NASA CR-128878 (N73-20142) Upgrading and Extending Testing of the MSC Integrated Water and Waste Management Hardware.

Patent status:

NASA has decided not to apply for a patent.

Source: T. L. Hurley and R. A. Bambenek of Chemtric, Inc.
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